

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number  
**WO 2004/036626 A2**

(51) International Patent Classification<sup>7</sup>:

H01L

(74) Agent: FALLON, Steven, P.; Greer, Burns & Crain, Ltd.,  
Suite 2500, 300 S. Wacker Drive, Chicago, IL 60606 (US).

(21) International Application Number:

PCT/US2003/033132

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 17 October 2003 (17.10.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/419,477

18 October 2002 (18.10.2002) US

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*) **THE REGENTS OF THE UNIVERSITY OF CALIFORNIA** [US/US]; 1111 Franklin Street, Oakland, CA 94607-5200 (US).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

(72) Inventors; and

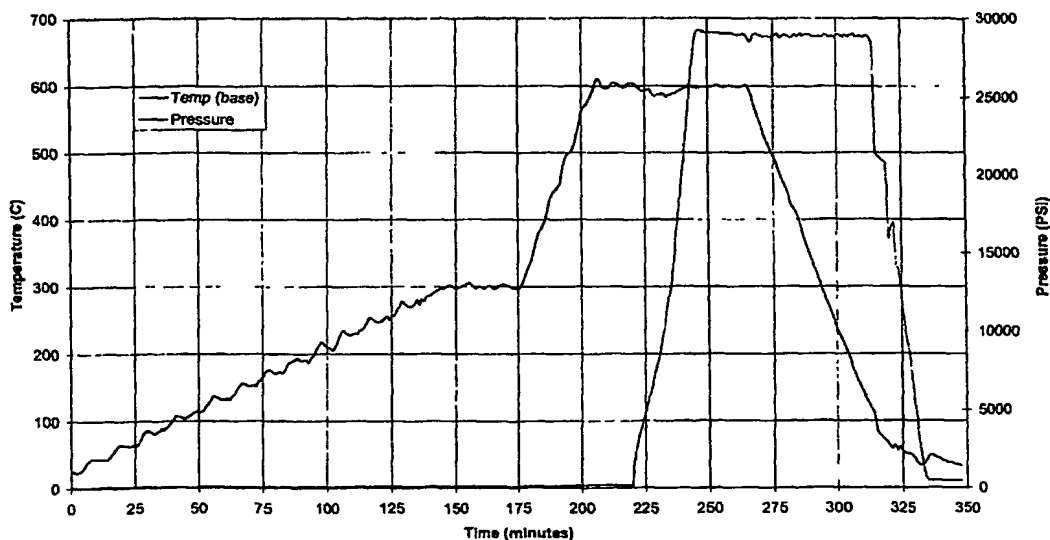
(75) Inventors/Applicants (*for US only*): NESTERENKO, Vitali [RU/US]; 1636 Caminito Solidago, La Jolla, CA 92037 (US). RUDEE, Mervyn, L. [US/US]; 1745 Kearsarge Road, La Jolla, CA 92037 (US). MAGES, Phillip [US/US]; 4173 Camino Islay, San Diego, CA 92122 (US). GU, Yabei [CN/US]; 9226 E. Regents Road, La Jolla, CA 92037 (US).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ISOSTATIC PRESSURE ASSISTED WAFER BONDING METHOD



(57) Abstract: In the invention, wafers are initially weakly bonded. The weak bond is sufficient to impede penetration of an isostatic pressure transmitting media, e.g., a gas or liquid, into any region between the wafers. The weak bond also permits handling. Weak bonds are strengthened, or new bonds formed, by heating and pressing together the weakly bonded wafers by application of isostatic pressure. By the invention, weak interfacial bonds may be strengthened.

WO 2004/036626 A2